DOCUMENT RESUME

ED 042 513 PS 003 454

AUTHOR	Blumenfeld, Phyllis; Keislar, Evan R.
TITLE	The "Tell-and-Find Picture Game" for Young Children.
INSTITUTION	California Univ., Los Angeles. Center for Head Start Evaluation and Research.
SPONS AGENCY	Office of Economic Opportunity, Washington, D.C.
PUB DATE	Mar 70
NOTE	22p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.20
DESCRIPTORS	*Educational Games, Instructional Materials, *Language Development, *Listening Comprehension, *Preschool Children, Reinforcement, *Space, Verbal Communication
IDENTIFIERS	Project Head Start, *Tell And Find Picture Game

ABSTRACT

The "Tell-And-Find Picture Game" is designed to teach both speaking and listening comprehension skills to preschool children. The game is arranged to provide a cooperative experience for two players who take turns in the role of a speaker and of a listener. In order to test the effectiveness of the game in encouraging cognitive gains, a pilot study was run in which the game was adapted to provide specific instruction on a number of spatial concepts. Thirty 4-year-old black Head Start children were pretested on these spatial concepts, and the 10 children who made the most errors were selected for the pilot study. These children played the game for 20 minutes on each of six days. On the seventh day, posttests, which were identical with the pretests, were administered. The children were also tested for affective response to the game. The outcome of these tests indicated that the children both enjoyed the game and improved their language skills of listening comprehension and verbal expression as a result of it. The emphasis on cooperation seemed to be a good feature. The study also suggested certain improvements in the game, some of which would decrease the dependence on the experimenter and make the players more autonomous. (MH)

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

F-OEO
PS

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED042513

THE "TELL-AND-FIND PICTURE GAME" FOR YOUNG CHILDREN

Phyllis Blumenfeld and Evan R. Keislar

University of California, Los Angeles

Introduction

Although many games are being introduced into preschool curricula, there is little evidence regarding their effectiveness in producing cognitive learning or their contribution to the development of positive attitudes toward intellectual tasks. Games which children can play on their own or with a minimal amount of supervision will surely free the teacher to provide more individual instruction to those pupils most in need of help.

The goal of the pilot study, reported in this paper, was first to create a game to teach both speaking and listening comprehension skills and then to obtain empirical evidence as to how well it taught certain language skills. Informal evidence was sought with respect to such questions as appropriate learning objectives, methods of reinforcement, and amount of supervision required. General observations were also made about variables in the playing conditions for young children, such as the clarity of directions, the appropriateness of the materials, and the optimum length of time for each play period.

PS003454

General Description of the Game

The "Tell-and-Find Picture Game" is arranged to provide a cooperative experience for two players who take turns at the role of a speaker and that of a listener. By setting up additional pairs of players, several

[1]This is a report of a pilot study supported by the United States Office of Economic Opportunity through the UCLA Head Start Research and Development Center, under the direction of Dr. Carolyn Stern. Report submitted March 1970, Los Angeles, California.

such games may be carried on simultaneously. Although in the present format for the game an adult is necessary to provide verbal commentary, the use of a recording device (such as the Language Master or the Electronic Futures recorder) would permit two children to play together without close supervision.

In the actual game, each player is given a perforated cue card showing four to six pictures, with one perforation in the card for each picture. The cue card is placed on a board on top of which are a number of copper sheets so that electrical contacts may be made for each picture through the card. Each child learns to identify a picture by placing a pointer (a wired stylus) through the corresponding hole onto the copper plate to make an electrical contact. When player B successfully identifies in this manner the picture corresponding to the one which player A already has selected, a circuit is closed and a "goal" light is turned on to indicate a successful match. The goal light is placed inside a goal picture so that, for example, the nose of a clown is lighted.

After the players have each been given a cue card, the usual sequence is as follows: Player A is given appropriate verbal instructions to identify one of the pictures; he may hear this information through earphones so that player B cannot hear the relevant cues. (Player A sometimes chooses one of the pictures on his card himself.) Player A speaks aloud to player B, describing the picture he is identifying with his pointer. If player A's cues are adequate and are understood by player B, the goal light should be turned on. Player A then selects and describes another picture. When all pictures on the cue card have thus been described and communicated, another cue card is placed on the board for each player and another round begins with the players switching roles.

The task may be varied to teach a number of outcomes. For example, the problem at its simplest might be to have player A describe a picture so that player B can identify a similar picture in his set. This requires the players to use and understand the language which is cued by the nature of the pictures presented. This picture-matching task was the one used in the present application where children were expected to deal with pictures denoting spatial relationships.

In a second type of problem, the two players might be expected to identify a pair of pictures which represent a time sequence or cause and effect relationship. A third application might permit the two children to identify objects which belong to the same class even though the pictured objects may be physically quite different. Judicious use of distractors in all of the above cases should make the task more clear.

As presently designed, the game is cooperative in nature; the goal is attained only if the participants work together. The necessity for both language expression and comprehension arises from the game conditions; communication serves a somewhat more natural function than in a language laboratory type of instructional program.

The Pilot Study: The Teaching of Spatial Concepts

For the purpose of this pilot study, the game was adapted to provide specific instruction on a number of spatial concepts: Under, over, on, next to, into, out of, between, in front of, and in back of. The educational objective was to help children,(1) when presented with a given picture, to describe clearly the spatial relationships involved, and (2) when given an oral description of a spatial relationship, to identify the appropriate picture. It was hypothesized that, after playing the game, children would

show improvement in identification and verbal description of pictures and three dimensional arrangements illustrating these concepts. It was further hypothesized that the children would enjoy the activity, as evidenced by their choice of playing the game rather than participating in other activities presented in a paired comparison test.

The game was played by two children at a time under the direction of the experimenter. The players sat at opposite ends of the table with a divider between them blocking their view of each other. Each player was given his own board with a cue card with four to six pictures showing the same two objects in various spatial relationships (see Figure 1 for samples). New sets of cards with different objects and spatial relationships were substituted for the original as the game was played. At any given moment, identical pictures appeared on each cue card for both children; however, the pictures were positioned on the cards differently for each child to eliminate the possibility of identifying the correct picture by peeking. Each player located a picture by placing his stylus on the corresponding hole on a card so as to make contact with a metal plate underneath. When each player's stylus was placed on the matching pictures, the red reward light was lit up. When one player was speaking he placed his stylus on the picture being described; the other player then had to locate with his stylus the appropriate picture. If the second child could not find the correct picture, the first one had to clarify his description. The available goal pictures in this pilot study included a clown, a monkey, a lion, a doll, a horse, and a tiger. (See Figure 2 for sample goal picture.) Each of these pictures could be placed on the game board so that when the correct response was made the contact lighted

up a red bulb. The pictures were placed so that the light illuminated a humorous part of the picture, such as the clown's nose or the monkey's tail.

For each cue card the game was played in two parts. In the first part, "Find-the-Picture," each child was required to place his pointer on the picture described by the experimenter. Illumination of the red bulb indicated a correct choice by both players. Both players were then required to repeat the description of the picture. All the pictures had to be correctly identified and described by the children before the second part began. Verbal description and identification were then employed to play "Tell-and-Find." The experimenter indicated a picture on the first child's card. This player was required to place his pointer on the picture and to describe it to his partner, who subsequently had to place his pointer on the picture described, the correct choice being rewarded by the red light. The partner was then asked to describe a different picture and the first child then had to select the picture described.

The procedure was repeated for each picture, alternating the player who "tells" and the player who "finds." After parts one and two had been completed, each player placed a new card on his board and the game was begun again.

Method

Subjects

Thirty four-year-old black children enrolled in a Head Start class were given the pretest described below. The ten children who made the most errors on this test were selected for the pilot study.

PS003454

Pretest

Each child was tested individually by the experimenter in one session of approximately 10 minutes. The pretest consisted of 45 questions and was divided into two parts, one dealing with pictures and the other involving three dimensional objects.

Part 1. Pictorial Test. This section was subdivided into three tests of nine questions each about pictures of a cat and a chair (see Appendix 3). Each of the pictures showed a cat in one of nine different positions with respect to a chair: over, under, on, next to, jumping into, jumping out of, between, in front of, or in back of the chair.

1A. Verbal Multiple Choice. Three verbal choices regarding the cat's position were presented for each picture. All nine possibilities were used in different combinations of three for each of the questions. The placement of the correct alternative in the question was randomized to control for position preference. The child was shown each picture separately and asked, "Can you tell me where the cat is?" For example, for the picture of the cat on the chair, the experimenter asked, "Is the cat under the chair, is the cat on the chair, or is he next to the chair?" The child was required to repeat the correct alternative. If he did not respond or did not understand, the choices were repeated.

1B. Picture Multiple Choice. The child was shown a series of five cards, each with three pictures of the cat in various positions with respect to the chair. The child was required to point to the picture described by the experimenter. Two questions were posed for each card, e.g., "Point to the cat next to the chair. Point to the cat in back of the chair." The location of the correct pictures on the cards was randomized to control for position preferences.

1C. Verbal Expression. Each of the nine pictures was presented separately. The child was asked, "Can you tell me about this picture? Where is the cat? The cat is...." The child was required to verbalize correctly the position of the cat with respect to the chair.

Part 2. Three Dimensional Object Test. This section consisted of two parts, with nine questions on each part. Two boxes and three cars served as manipulanda.

2A. Selection. The three cars were placed in various positions with respect to the two boxes. The nine spatial concepts were combined to produce five different arrangements of the cars. For each arrangement, the child was required to point to two cars described by the experimenter, e.g., "Point to the car under the box," and "Point to the car in back of the box."

2B. Manipulation. The two boxes were placed on the table and the child was given one car to manipulate. He was instructed to place the car in each of the nine positions, e.g., "Put your car under the box." "Put your car next to the box," etc.

The child's responses were recorded as correct or incorrect for each of the 45 questions. On each of the five subtests the maximum score was nine points.

Procedure

On each of the six days two children at a time were brought into a small room next to their classroom. Each of the five pairs played the game for twenty minutes each day. During each session new cards in the sequence were introduced so that the game was played at a more difficult level as the number of spatial concepts presented was increased.

On the first day, the experimenter introduced the game by placing a card with pictures of a horse and a pig on each child's board. The children were instructed to place their pointers on the picture of the horse. The red light appeared and the experimenter explained, "See the clown's nose light up. That means that you both are right. We are going to try to turn on the light every single time. Remember, when you see the light, it means you both are right!"

Next, the fact that the light would only work when both players put their pointers on identical pictures was demonstrated. In addition, the children were shown that if only one of them was pointing to the picture no light would appear. A new card with pictures of a bear, an elephant, and a bird was placed on the boards. The demonstration was repeated and it was again explained that both of the children must have their pointers on the same picture to turn on the red light.

The concepts over and under were introduced and cue cards #1 and #2 were played. On the second day the concepts on and next to were presented; cards 3, 4, and 5 were played. A review of the four prepositions, cards 6, 7, and 8, followed on the third day. Into, out of, and between were presented on the fourth day and cards 9-12 were used. In front of and in back of were illustrated on the fifth day via cards 13-16. Cards 17-19, reviewing all nine spatial concepts, were played on the last day. Sample cue cards are presented in Figure 1 and the entire card sequence in Table 1.

During the first session a picture of a clown face (Figure 2) with the red light illuminating the nose was used as the goal. However, on subsequent days the players themselves selected the picture they wished to have light up.

Teaching Sequence

New spatial concepts were introduced two at a time. Two representations of each new word were portrayed on the introductory cards (see Table 1, card nos. 1, 3, 9, 13). The cards were designed so that the same objects were illustrated in each of the two positions, thereby providing contrasting examples of the spatial positions being taught (e.g., boy in front of airplane, boy in back of airplane; girl in front of slide, girl in back of slide).

The experimenter held up a copy of one of the pictures and described its contents, e.g., "The boy is in front of the airplane." The players were then requested to place their pointers on their pictures and to restate the description. Next, a picture depicting the same spatial concept was shown (e.g., "The girl is in front of the slide"), followed by two illustrations of the second new concept. The description by the experimenter, selection of the picture and restatement of the description by the players was repeated for each picture.

The four pictures were then rearranged. This time the presentation of a picture delineating one spatial concept was followed by the presentation of a picture of the same object illustrating the second spatial concept in order to provide practice in discriminating between the concepts (e.g., boy in front of airplane versus boy in back of airplane; girl in front of slide versus girl in back of slide). As before, on each presentation the children were required to place their pointers on the picture shown and to describe its contents.

Next, the "Tell-and-Find" sequence was begun. The experimenter indicated a picture on one player's board. This child was required to place

his pointer on the picture and describe it to his partner, whose view of the picture was blocked by a divider. The partner then had to select the illustration described; the correct choice being indicated by the red light. The procedure was repeated, alternating the task assigned to each player, until all the pictures had been described.

Practice Procedure

Each introductory card was followed by the presentation of a practice card illustrating three contrasting examples of each of the two new concepts (e.g., dog in front of house, dog in back of house; girl in front of television, girl in back of television; rabbit in front of tree, rabbit in back of tree). The players were cautioned to look carefully at all the pictures, while the experimenter enumerated the objects illustrated on the card, in an effort to clarify any unfamiliar objects for the players, e.g., "Look at the pictures of a dog and a house;" "Look at the pictures of the girl and the television," etc.

The "Find-the-Picture" sequence was then initiated. The experimenter described a picture, e.g., "The girl is in front of the television" and the players pointed to the picture while repeating the description. The correct selection of the picture by both players resulted in the appearance of the red light. After the procedure had been repeated for each picture, the "Tell-and-Find" sequence, described earlier, began and was played for each picture.

Upon completion of both the "Find-the-Picture" and "Tell-and-Find" sequences, a new card with new pictures was introduced and the appropriate procedure, either teaching or practice, was carried out.

Since the bulb was wired to light only when both children had pointed to the same picture, during the "Find-the-Picture" portion of the game, no red light appeared if either one or both players did not select the picture described. When only one of the players had chosen incorrectly and no light appeared, if the first player did not realize his error, his partner generally provided correction by spontaneously responding, "I found it, you didn't." The experimenter repeated the description of the picture to be found when one of the participants made a mistake. On occasion, when one child was slow in finding the picture described and the other child had chosen accurately but expressed doubt about his decision, the experimenter provided affirmative feedback.

During the "Find-and-Tell" section, when a player gave an inaccurate account of the picture, the experimenter told the player that he was not right and must look carefully at the picture, then try again. If the player's second attempt was also incorrect, the experimenter pointed to the same picture on the partner's board and asked him to help by telling the first child about the picture.

Posttest

On the day after the sixth session of the game, the posttest, which was identical to the pretest, was given to each child by the experimenter. A paired comparison test of affect was also administered. Six questions were posed in which the alternatives of playing the game, listening to a story, drawing a picture, or playing in the sandbox were paired in all possible combinations. The child was asked to make a choice for each of the possible combinations, e.g., "Would you like to play the game or listen

to a story?" Each child was also asked, "Would you like to play the game again tomorrow?"

Results

Mean scores on the subtests of the pretest and posttest are shown in Table 2, along with corresponding differences and levels of significance. It may be noted that the chance scores on Subtests 1A, 1B, and 2B are all at about 3, as each of the nine questions on the tests required selecting one of three choices. Since the mean scores were only one or two points above chance, the pretest was clearly difficult for the children. Each of the 10 players showed improvement on the posttest. On Subtests 1A, 1B, and 2A the mean scores on the posttest were above 8.0 so that the children on the average gave less than one incorrect response. The gain on each subtest was highly significant.

Tests 2A and 2B, using three dimensional objects, were included to determine whether practice in describing illustrations of spatial concepts generalized to manipulation of objects. The mean scores on the three dimensional object posttests were 8.5 and 7.8 for 2A and 2B respectively. The gains from pre to posttest are significant (2A, $t = 3.42$; $p < .01$; 2B, $t = 4.21$; $p < .01$). The results support the hypothesis that the children acquired a broad understanding of spatial concepts.

The answers to paired comparison questions designed to assess the player's enjoyment of the game revealed that the game was preferred to both drawing pictures and listening to a story, but ranked second to playing outdoors in the sandbox. All of the children expressed the desire to play the game again on the following day. Their enthusiasm was apparent to the experimenter; when she arrived in the morning several of the

children would ask to play the game, and later they would indicate the desire to play again even after their sessions had been completed for the day.

This enjoyment may, of course, be attributed to the novelty of the game, to a lack of interest in ongoing classroom activities, or to the rapport established by the experimenter; in any case, the game was obviously a pleasant activity for the children.

Discussion

Cognitive Outcomes

A number of factors not measured objectively but observed by the experimenter may have contributed to the improvement in scores. The higher posttest scores may have been partly due to increased motivation to do well in order to please the instructor, once rapport had been established. Another possibility is that those children who scored the lowest on the pretest did not understand the task; however, since many of the children tested attained nearly perfect scores on the pretest, it seems unlikely that lack of comprehension was a major cause of low scores.

A more probable factor was that although the children were cautioned repeatedly to look carefully and to try hard to get the right answer every time, many of the low scorers made their choices impulsively on the pretest, without having examined each of the alternatives. Thus, a child's initial performance may not have been an accurate reflection of his knowledge about spatial concepts. Posttest scores may indicate a decrease in impulsivity and more careful consideration of choices by low scorers after having played the game.

The most dramatic change noted by the experimenter during the course of the game was the increase in verbalizations and in the clarity of enunciation by the players. At first many of the children would mumble, slur over words, and give almost incomprehensible responses, even when simply repeating descriptions spoken by the experimenter. After a few sessions the participants spoke more clearly and audibly, both during the "Find-the-Picture" and "Tell-and-Find" parts of the game.

It is likely that an increase in motivation and confidence, greater understanding of the task, and a decrease in impulsivity are all factors that affected posttest scores and are partly a result of the learning which occurred during the game.

Affective Outcomes

Affirmative responses by all the players to the question, "Do you want to play the game again tomorrow?" indicate that the children enjoyed the experience. The finding from paired comparison questions also revealed that playing the game was a highly enjoyed activity.

The chance to light up a part of a large figure was clearly fun for the children. Many of them had favorite pictures and chose the same ones to play with during almost every session. The clown, which the children named "Bozo," proved to be the most popular. In fact, the questions comparing their liking for playing the game with desire for participating in another activity often brought the response, "I want to light up the clown."

The utilization of a great variety of illustrations was another positive feature of the game. The opportunity of looking at new pictures, once those being played had been successfully described, proved to be as rewarding as the appearance of the red light and provided an impetus for

the children to persevere at a task that was obviously rather difficult. On many occasions the children would ask to play again with pictures they remembered from previous sessions. Employment of pictures both for instruction and reward appears to be one effective method for maintaining the interest of young children. Since one of the basic difficulties in teaching cognitive skills to youngsters is the problem of holding their attention, this practice may be of value for use in many educational games.

It appeared that 20 minutes was an appropriate length for each game session. The interest of the children was maintained for this period over the six days of the study. During the period of play, the children were actively involved at all times, either in choosing illustrations described by the experimenter or in describing and choosing the pictures by themselves. Through this arrangement, the problems of boredom or wandering attention were avoided.

Proposed Improvements

At first the players had some trouble understanding that the red light would go on only when they both pointed to the same picture; after a short while, however, they seemed to comprehend the necessity of a cooperative effort. Nevertheless, the need for adult supervision could be minimized if each child were given immediate individual feedback about his answer. A small buzzer or light on top of each player's board could signal a correct response; only when both players had chosen accurately would the large figure light up. While the need for cooperation would be maintained, this design would eliminate the problem of delayed reinforcement which occurred when one player had pointed to a picture and his partner was slow in making a decision, or when the players were uncertain as to which

one of them had not selected the correct picture.

The children generally handled the materials appropriately. However, a major difficulty, which can be easily rectified, was that once the child had made his selection, there was no mechanism to secure the pointer on his choice. A small hollow container under each picture on the board could be provided to hold the tip of the pointer in place. This would insure that the light would be activated once both players had pointed to the correct picture. A better solution might be to replace the pointers by a system of buttons situated under each picture on the board. The child could press the button corresponding to the picture described. To prevent random pressing of buttons after a selection had been made, all other buttons would lock in place until feedback was provided. If the red light did not appear, the buttons would unlock, enabling the player to make another choice. Either arrangement would greatly decrease the need for adult supervision by preventing the frequent occurrence of pointers being dropped, fiddled with, or moved out of position while one player was waiting for the other to put his pointer on the picture described.

The participation of the experimenter was a key factor in the success of the game in this study. However, two improvements would permit the children to play much more independently: (1) the use of a recorder to provide oral directions for the game and (2) a revision of the program to provide a more efficient sequence of instruction. These modifications are currently in process.

Conclusions

The results of the pilot study indicate that children can dramatically improve their language skills of listening comprehension and verbal expression

through playing the game described. While the instruction involved only pictures, the children also showed large gains in demonstrating their understanding by handling three dimensional objects. The game was also greatly enjoyed by the children; not only was the goal of lighting up figures exciting to them but the cooperative activity in attaining this goal seemed to be highly enjoyable. On the other hand, the game, as presently developed, required considerable participation by the experimenter.

However, the potentialities of the game were not fully developed in the present formulation. For example, by introducing some changes in the equipment and making revisions in the sequence of cards used for rounds in the game, the players could proceed with only occasional supervision by an adult. By adding a third player as director, the necessary equipment might be greatly simplified. The application of the game to other educational outcomes seems highly promising.

One important feature of the game seemed to be that speaking and listening by the players served a real purpose--one which simulated closely the function of clear communication in everyday life. The game setting provided for these young children a highly relevant classroom environment of social interaction. Although the game could easily be made more competitive, the stress on cooperation seems to be a desirable feature.

Table 1

Cue Cards Used in the Pilot Study

Card No.	Description of Pictures on Each Card		
1.	ball over table plane over bridge	ball under table plane under bridge	
2.	bird over tree fish over boat	monkey over fence bird under tree	fish under boat monkey under fence
3.	boy on horse boy next to horse	girl on chair girl next to chair	
4.	flower next to box spoon next to cup	spoon on cup cat next to ball	cat on ball flower on box
5.	fish on boat dog on table	fish over boat fish under boat	dog over table dog under table
6.	bird over house ball on chair	ball next to chair bird next to house	bird on house ball over house
7.	boy over fence boy under fence	boy next to fence boy on fence	
8.	doll on bed doll under bed	doll next to bed doll over bed	
9.	fish into water dog into doghouse	fish out of water dog out of doghouse	
10.	bird out of cage rabbit out of wagon	rabbit into wagon monkey out of bag	monkey into bag bird into cage

Table 1 (continued)

Card No.	Description of Pictures on Each Card		
11.	boy into car boy between cars	boy next to car boy out of car	
12.	soda out of glass, into bottle elephant out of cage	soda out of bottle, into glass glass between bottles	elephant between cages elephant into cage
13.	boy in back of plane girl in back of slide	boy in front of plane girl in front of slide	
14.	dog in front of house girl in back of T.V.	rabbit in front of tree dog in back of house	girl in front of T.V. rabbit in back of tree
15.	boy in front of bicycle boy between bicycles	pencil in back of book pencil in front of book	boy in back of bicycle pencil between books
16.	fork in front of bowl fork between bowls	traffic light in front of car traffic light in back of car	traffic light between cars fork in back of bowl
17.	pencil into box pencil between boxes	pencil under box pencil out of box	pencil over box pencil in front of box
18.	boy on bus boy out of bus	boy in back of bus boy next to bus	boy into bus boy in front of bus
19.	bee between flowers bee over flower	bee on flower bee next to flower	bee in back of flower bee under flower

Table 2

Means and Standard Deviations on Subtests and

Significance of Mean Differences (Based on 10 Subjects)

Subtest	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Gain	T-Test
1A	3.7	1.6	8.1	1.2	4.4	7.05**
1B	4.7	1.8	8.2	1.2	3.5	4.93**
1C	2.4	1.7	6.9	1.4	4.5	6.08**
2A	6.6	1.6	8.5	.1	1.9	2.93*
2B	4.5	1.8	7.9	1.4	3.4	4.21*

*p < .01

**p < .001

Figure 1. Sample Goal Card

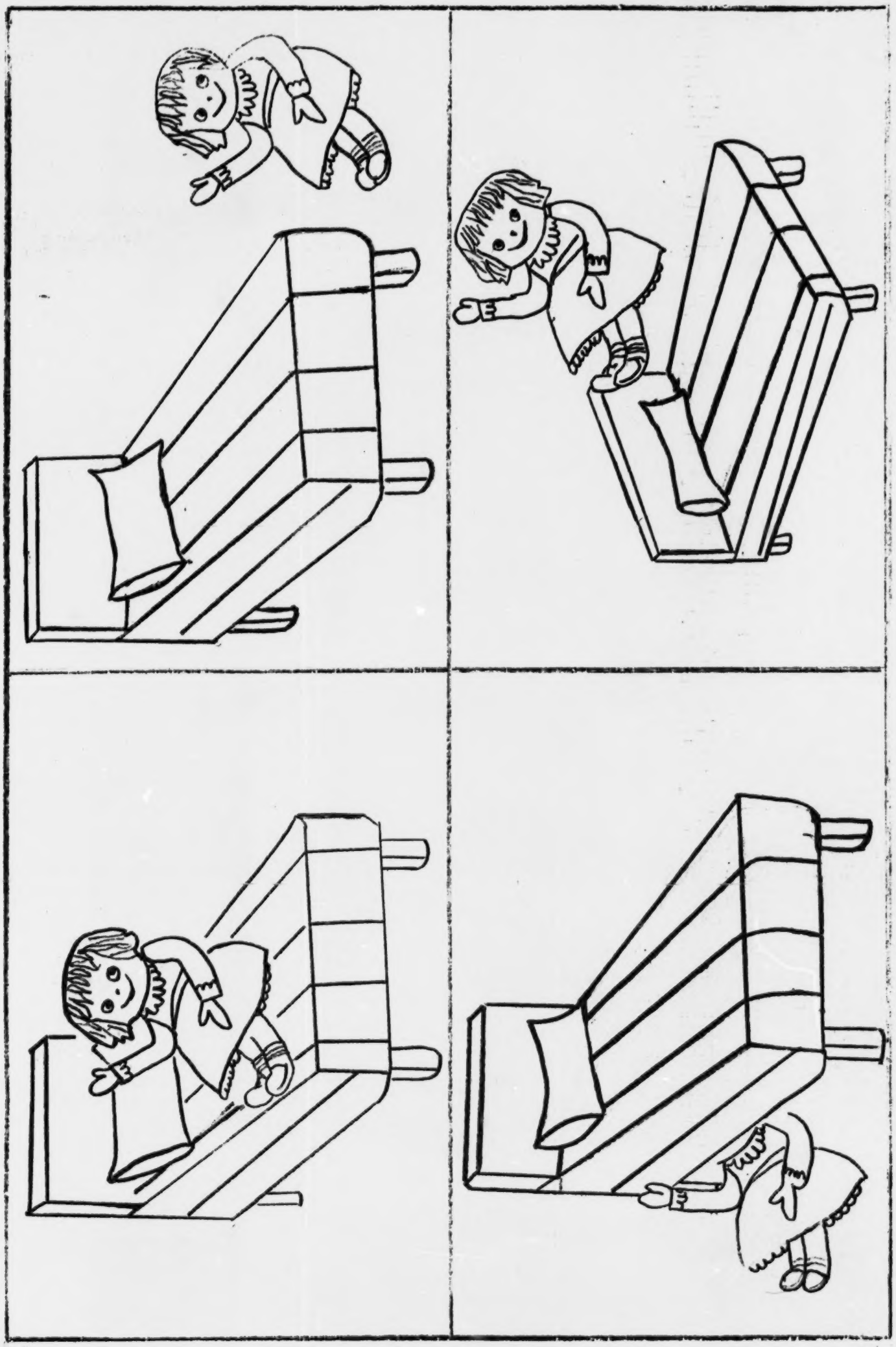

Figure 2. Sample Cue Card